

Serial No.: 10/811,565
Docket No.: ECV-5783
Amendment dated August 10, 2007
Response to Office Action dated April 19, 2007

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Amendments to the Specification:

Paragraph [0028] is amended as follows:

[0028] Now with reference to Figs. 2 and 3, the support frame 40 may be fabricated as a
5 single, continuous, integral, wire-like element 70 of a homogeneous material. One particularly
desirable material is Nitinol, and a preferred fabrication technique is to laser-cut a 2-dimensional
blank from a sheet, or a 3-dimensional blank from a tube, and then bend and heat treat the blank
into the illustrated shape. Further details on this technique can be seen in U.S. Patent Publication
No. 2004/0078950 ~~U.S. patent application No. 10/423,019~~, filed April 24, 2003, the disclosure of
10 which is expressly incorporated herein by reference. Using such techniques, the cross-section of
the element 70 will typically be square or rectilinear, although electro-polishing is desirably
performed to microscopically round the corners.

The Abstract of the Disclosure is amended as follows:

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Abstract of the Disclosure

A highly flexible prosthetic heart valve having an internal leaflet support frame that is
designed to separate into individual cusps after implantation. The leaflet support frame (or
"stent" or "wireform") has a plurality of alternating cusps on an inflow end and commissures on
20 an outflow end. The cusps of flexible leaflets attach around the support frame cusps. The
support frame provides structural rigidity during implantation, but each support frame commissure
has a point of weakness that is designed to fracture upon repeated relative movement of the cusps
after implantation such that the support frame cusps separate. ~~Because of the flexible nature of~~
~~the heart valve, after the cusps separate the implanted heart valve does not significantly impede~~
25 ~~the natural motions of the annulus or adjacent vessel walls.~~ The support frame may be a
homogeneous material such as Nitinol with the point of weakness being a narrowing at the
commissure tips. The commissure tips can include enlarged regions adjacent the point of
weakness that help prevent the separated ends from poking through surrounding fabric.